



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,826	08/17/2006	Andrea De Luca	NOTAR-038US	9661
7663	7590	11/09/2010	EXAMINER	
STETINA BRUNDA GARRED & BRUCKER 75 ENTERPRISE, SUITE 250 ALISO VIEJO, CA 92656			MOK, ALEX W	
ART UNIT		PAPER NUMBER		
2834				
MAIL DATE		DELIVERY MODE		
11/09/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/589,826	DE LUCA ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	ALEX W. MOK	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 07 October 2010.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 19-31 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 19-31 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/9/10 and 10/7/10 has been entered.

### ***Claim Objections***

2. Claim 31 is objected to because of the following informalities: the terms "the rotor" and "the support structure" in lines 4-5 and the term "the dynamic parameters" in line 6 of claim 31 do not have proper antecedent basis within the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimmel et al. (US Patent No.: 6543712) in view of Lewis et al. (US Patent No.: 4643592) and Eakman et al. (US Patent No.: 5714818).

For claim 19, Grimmel et al. teach a laying head for forming coils using continuous and substantially rectilinear rolled products comprising a support structure (reference numeral 36, figure 1), a rotor (reference numeral 12) adapted to rotate about its own axis (reference numeral 22) under the action of motor means and held in rotation by the support structure by means of bearings (reference numerals 16, 20), characterized in that there are only two bearings and at least one of the two bearings incorporates vibrations damping means (see figures 1, 4).

Grimmel et al. do not specifically disclose the vibrations damping means comprising a passive oil film bearing of the hydrodynamic type.

Lewis et al. disclose bearings for a rotating machine using oil (reference numerals 1, 14, 15, 16, 17, figure 1, see column 5, lines 40-44).

Eakman et al. disclose a bearing element (reference numeral 14, figures 4-7) developing a hydrodynamic layer and being a passive component (see column 5, lines 25-33), i.e. a passive hydrodynamic bearing.

It would have been obvious to include the oil film bearing as disclosed by Lewis et al. and the passive hydrodynamic bearing as taught by Eakman et al. in the invention of Grimmel et al., since Lewis et al. also use this technique for vibrations (see the Abstract) and the invention of Eakman et al. is concerned with hydrodynamic components creating eccentric rotation of the shaft within the bearing (see column 2,

lines 46-52), which would cause vibration in the device, and a person of ordinary skill would have applied these configurations for reducing the vibrations in the layer head.

For claim 20, the structure illustrated in figure 1 of Grimmel et al. disclose each of the bearings in Grimmel et al. being joined to the pressing device, which can be considered to incorporate the vibrations damping means.

For claim 21, Grimmel et al. disclose the claimed invention except for at least one axial type hydrodynamic bearing being provided in proximity of a rolled product inlet side. The inventions of Lewis et al. and Eakman et al. disclose the hydrodynamic bearing as explained for claim 19 above, and this would be in proximity of the rolled product inlet side when applied to the invention of Grimmel et al. (see figure 1). It would have been obvious to modify the rolled product inlet side of Grimmel et al. to have the bearing of Lewis et al. in view of Eakman et al. be in proximity, since this would further enhance the reliability of the device for reducing the vibrations, and would also achieve acceptable engineering costs.

For claim 22, Grimmel et al. in view of Lewis et al. and Eakman et al. teach the claimed invention except for the hydrodynamic bearing being of the "tilting pad" type. Lewis et al. disclose the bearing being a "tilting pad" (see column 5, lines 44-48), and it would have been obvious to include the tilting pad of Lewis in the inventions of Grimmel et al. and Eakman et al. since this would further provide vibration reduction in the device.

5. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimmel et al. in view of Lewis et al. and Eakman et al. as applied to claims 19 and 20 above, and further in view of Raimondi (US Patent No.: 3680932).

For claim 23, Grimmel et al. in view of Lewis et al. and Eakman et al. disclose the claimed invention except for the hydrodynamic bearing being of the lobed type. Raimondi discloses the bearings having lobes (figures 8, 10, 12, see column 3, lines 1-10). It would have been obvious to have the lobed type bearings as disclosed by Raimondi in the inventions of Grimmel et al., Lewis et al., and Eakman et al. since Raimondi uses this technique to provide bearing stability (column 1, lines 25-28), the same problem the claimed invention is concerned with.

For claims 24-26, Grimmel et al. in view of Lewis et al. and Eakman et al. disclose the claimed invention except for the hydrodynamic bearing being provided with three lobes, two lobes, or the arrangement of the lobes on the bearing being asymmetrical. Raimondi discloses the bearing having two or three lobes, and the lobes being asymmetrical (see figures 8, 10, 12). It would have been obvious to include two, three lobes and the asymmetrical configuration as disclosed by Raimondi et al. in the inventions of Grimmel et al., Lewis et al., and Eakman et al. since this would further limit the number of structural elements and enhance the reliability of the system.

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grimmel et al. in view of Lewis et al. and Eakman et al. as applied to claim 19 above, and further in view of Dede (US Patent No.: 6135639).

For claim 27, Grimmel et al. in view of Lewis et al. and Eakman et al. disclose the claimed invention except for the oil film bearing being of the "squeeze film" type. Dede discloses the bearing of the squeeze film type (reference numeral 110, figure 1). It would have been obvious to include this squeeze film type bearing as disclosed by Dede in the inventions of Grimmel et al., Lewis et al., and Eakman et al. for the purpose of further improving the means of reducing vibrations in the device.

7. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimmel et al. (US Patent No.: 6543712) in view of Lewis et al. (US Patent No.: 4643592).

For claim 28, Grimmel et al. teach a laying head for forming coils using continuous and substantially rectilinear rolled products comprising a support structure (reference numeral 36, figure 1), a rotor (reference numeral 12) adapted to rotate about its own axis (reference numeral 22) under the action of motor means and held in rotation by the support structure by means of bearings (reference numerals 16, 20), characterized in that the bearings means incorporates vibrations damping means comprising a plurality of coils (reference numeral 44) arranged around the rotor in proximity of said bearing, the coils being adapted to produce a magnetic field under the action of control means, said magnetic field creating a force substantially perpendicular to the axis (reference numeral 22, see figure 1) and of a predetermined intensity so as to eliminate the inertial forces generated by the masses of the rotor during rotation

about the axis (see column 3, lines 20-22). Grimmel et al. however do not specifically disclose a sensor which provides feedback to the control means.

Lewis et al. disclose sensors (reference numerals 22, 23, figure 2) that provide feedback to control means (reference numeral 24, see column 6, lines 17-47).

It would have been obvious to include the sensors as taught by Lewis et al. in the invention of Grimmel et al. since the invention of Lewis et al. is related to reducing vibrations in the machine (see the Abstract), which is the same field of endeavor as the applicant.

For claims 29 and 30, Grimmel et al. disclose the plurality of coils being arranged along a hemicycle of the rotor and along the entire circumference of the rotor (see figure 4), and it is inherent that the coils would produce resultant magnetic forces that are perpendicular to the axis, and Grimmel et al. illustrate coils that are orthogonal to each other in figure 4, which would produce orthogonal resultant forces.

For claim 31, Grimmel et al. teach the laying head (see figure 1), but do not specifically teach the method for vibrations damping of a laying head comprising the following steps: a) determining by means of sensors of dynamic parameters relative to the vibrations produced by the rotor during a rotation thereof on the support structure; b) transmitting predetermined data, relative to the dynamic parameters, to electronic control means; c) defining activation modes of magnetic coils so that magnetic forces are produced, the resultant of which is such as to eliminate inertial forces producing vibration in the rotor.

Lewis et al. disclose sensors for determining parameters (reference numerals 22, 23) for transmitting data to an electronic control (reference numeral 24, see column 6, lines 17-47), and this when applied to the magnetic coils of Grimmel et al. can control the magnetic forces produced by the coils.

It would have been obvious to include this method of vibration damping as disclosed by Lewis et al. in the laying head of Grimmel et al. since Lewis et al. also use this method for reducing vibrations in the machine (see the Abstract), which is the same field of endeavor as the applicant.

#### ***Response to Arguments***

8. Applicant's arguments with respect to claims 19-31 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX W. MOK whose telephone number is (571)272-9084. The examiner can normally be reached on 7:30-5:00 Eastern Time, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen P. Leung can be reached on (571) 272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen Leung/  
Supervisory Patent Examiner, Art Unit 2834

/A. W. M./  
Examiner, Art Unit 2834